REMARKS

The present application was filed on January 28, 2004 with claims 1 through 19. Claims 1 through 19 are presently pending in the above-identified patent application. Claims 6-7 and 10-11 are proposed to be amended herein.

In the Office Action, the Examiner objected to claims 1, 6-7 and 11-12 due to indicated formalities. In addition, the Examiner rejected claims 1, 4, 10, 12, 15-16 and 19 under 35 U.S.C. §103(a) as being unpatentable over Barsalou et al. ("Updating Relational Databases through Object-Based Views") and in view of Tatarinov et al ("Updating XML"). In addition, the Examiner rejected claims 2-3, 5, 7-9, 13-14 and 17-18 under 35 U.S.C. §103(a), as being unpatentable over Barsalou et al., in view of Tatarinov and further in view of Wiederhold et al ("A Structural Model for Database Systems")

With regards to the Rule 131 Declaration, the Examiner alleges that it may be insufficient to establish diligence from a date prior to the date of reduction to practice of the reference to a constructive reduction to practice of the invention. Since none of the references in the above-listed references appear to be impacted by this issue (i.e., they all appear to have a publication date prior the constructive reduction to practice of the present invention), Applicants submit that the Rule 131 Declaration issue is moot. If a reference is subsequently applied that is impacted by the Rule 131 Declaration, Applicants specifically reserve the right to revisit the Rule 131 Declaration.

Formal Objections

The Examiner objected to the term "can be reflected," which the Examiner asserts that the following result may not actually occur. The preamble of each independent claim recites the phrase "determining if an update to an XML document *can be reflected* in an underlying relational database." The independent claims, however, *always* produce a useful result whether or not the update can be reflected. In particular, the independent claims provide an indication (e.g., Yes or No) about whether the update can be reflected in the underlying database. This information is useful, even if the change cannot be reflected.

The Examiner also objected to the term "its." Each use of this term has been corrected.

Independent Claims 1, 12 and 16

Independent claims 1, 12 and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Barsalou et al. in view of Tatarinov et al. With regard to claim 1, for example, the Examiner acknowledges that Barsalou et al. does not teach reflecting an update to an XML document in

an underlying relational database. The Examiner asserts that Tatarinov et al. teach reflecting an update to an XML document in an underlying relational database (citing Section 6, page 418).

In addition, the Examiner asserts that Barsalou et al. teach the assignment of at least one of a plurality of categories to each of said nodes, wherein said plurality of categories are based on a cardinality relationship indicated by one or more correlation predicates and one or more foreign key constraints in said underlying relational database. Citing Barsalou et al. at pages 259, 253 and 255.

Barsalou et al., however, does not disclose or suggest *assigning* at least one of a plurality of *categories* to each of said nodes, wherein said plurality of categories are *based on* a ***cardinality relationship*** indicated by one or more *correlation predicates* **and** one or more *foreign key* ***constraints*** in said underlying relational database. Rather, the Examiner has merely performed a key word search to identify the term "foreign key" on page 255, col. 2. This passage is not even said to be a foreign key constraint. Rather, Barsalou et al. merely describes *replacing* a foreign key.

As indicated in the present application as filed,

> Predicates appearing in the WHERE clause are divided into two parts. The predicates involving binding variables are called correlation predicates. The other predicates are called non-correlation predicates. *The correlation predicates indicate the relationships among XML nodes.* When the correlation predicates are removed, each SQL query for a single node can be regarded as a relational view that is isolated from any other nodes, referred to as an element base view.
>
> Page 9, lines 20-25 (emphasis added).

In addition,

> In the view-relationship graph, annotated edges are added between each node and its direct parent to indicate the *cardinality relationship*. "←"annotates a 1:n relationship, "→"annotates a n:1 relationship, "↔"annotates a 1:1 relationship, and finally "—" annotates a m:n relationship. The view-relationship graph 1000 for the running example is shown in FIG. 10. The root of the view-relationship graph is the node corresponding to the root of the XML view document.
>
> *The cardinality relationship of a node pair is decided by correlation predicates in the view definition.* If the correlation predicate in the child node is of the form ForeignKey = $bindingVar.Key, where $bindingVar represents the direct parent node, the relationship between the direct parent and the child is 1:n. If the correlation predicate is of the form Key = $bindingVar.ForeignKey, the relationship between the parent and the child is n:1. If the foreign key also acts as a key for the element base view, the relationship is labeled 1:1. If there is no correlation predicate between the parent and the child, or the predicate is not equality, or the comparison is not between a foreign key and its referenced key, then the relationship is labeled m:n. If there are several correlation predicates between the same pair of nodes, the

> precedence of 1:1, n:1, 1:n, and m:n is followed, (highest to lowest), to assign a cardinality relationship. In the above discussion, the terms key and foreign key refer to those of the element base view. For instance, in Example 2, the key of the node conference-room is Confroom.cID, and the foreign key is Hotel m_id.
>
> Page 11, line 13, to page 12, line 2.

Applicants can find no disclosure or suggestion in Barsalou et al. of *assigning* at least one of a plurality of *categories* to each of said nodes, wherein said plurality of categories are *based on* a ***cardinality relationship*** indicated by one or more *correlation predicates* **and** one or more *foreign key* ***constraints*** in said underlying relational database, as required by each independent claim.

In addition, since Barsalou et al. does not *assign categories* on this basis, Barsalou et al does not disclose or suggest "determining whether said update to said XML document can be reflected in said underlying relational database *based on said assigned category*," as further required by each independent claim.

Applicants respectfully request the withdrawal of the rejection of independent claims 1, 12 and 16.

Dependent Claims 2-11, 13-15 and 17-19

Claims 2-11, 13-15 and 17-19 are dependent on independent claims 1, 12 and 16, and are therefore patentably distinguished over Barsalou et al. and Wang et al., alone or in combination, because of their dependency from independent claims 1, 12 and 16 for the reasons set forth above, as well as other elements these claims add in combination to their base claim.

All of the pending claims following entry of the amendments, i.e., claims 1-19, are in condition for allowance and such favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

The Examiner's attention to this matter is appreciated

Respectfully submitted,

Date: January 4, 2008

Kevin M. Mason
Attorney for Applicants
Reg. No. 36,597
Ryan, Mason & Lewis, LLP
1300 Post Road, Suite 205
Fairfield, CT 06824
(203) 255-6560